REMARKS

The Office Action dated February 8, 2005, has been received and carefully considered. Reconsideration of the outstanding rejections in the present application is also respectfully requested based on the following remarks.

At the outset, Applicants note with appreciation the indication on page 4 of the Office Action that claims 3-5, 8-9, 12-14, and 17-18 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, Applicants have opted to defer rewriting the above-identified claims in independent form pending reconsideration of the arguments presented below with respect to the rejected independent claims.

I. THE OBVIOUSNESS REJECTION OF CLAIMS 1, 2, 6, 7, 10, 11, 15, 16, and 19-24

On page 2 of the Office Action, claims 1, 2, 6, 7, 10, 11, 15, 16, and 19-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ramamurthy in the article "Wavelength Conversion in WDM Networking" in view of Jopson (U.S. Patent No. 5,822,476). This rejection is hereby respectfully traversed.

As stated in MPEP § 2143, to establish a prima facie case of obviousness, three basic criteria must be met. First, there

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must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Regarding independent claims 1 and 10, the Examiner asserts that Ramamurthy teaches a method for optically converting wavelengths in a multi-wavelength system having W wavelength channels, wherein W=2N, the method comprising the steps of: selectively directing a received frequency channel corresponding to a respective wavelength channel based upon a predetermined frequency mapping (as seen in Figures 9 and 10). The Examiner then acknowledges that Ramamurthy fails to specifically teach shifting the frequency of the selectively directed frequency channel at least once by an amount defined by $\pm 2^i \Delta f$, wherein Δf is a frequency spacing between adjacent frequency channels, and $i=0, 1, \ldots, N-1$. The Examiner then goes on to assert that Jopson

teaches that frequency shifting by an integer of the frequency spacing is well known in the art (column 2, lines 17-50).

In responding to Applicant's recent arguments, the Examiner asserts that "[g]iven a case where $i=0$, the frequency shift would result in simply Δf or the frequency spacing between adjacent frequency channels. As such, it is clear that Jopson teaches shifting the frequency of a channel by at least some frequency spacing equal to the spacing between adjacent frequency channel, hence meeting the limitations of the claims."

Applicant respectfully submits, however, that the Examiner's hypothetical where "i" is assumed to equal "0" fails to consider the express terms of the claims. In particular, the Examiner does not consider the fact that the claims expressly require that $i = 0, 1, \ldots N\text{-}1$, not just merely where $i=0$. That is, Applicant respectfully submits that the Examiner fails to account for instances where $i=1, \ldots N\text{-}1$, as expressly recited in the claims.

Moreover, Applicant respectfully submits that the Examiner has not shown that Jopson teaches or suggests the specific _claimed_ systems and methods for shifting the frequency of a selectively directed frequency channel. Put another way, while it may be true that Jopson teaches a "plurality of discretely separated optical comb channels with each channel replicating

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the original input signal but being spaced apart from each other by a first fixed frequency separation," there is no teaching or suggestion in Jopson that such a separation is determined according to the <u>specific</u> <u>formula</u> recited in each of the pending independent claims, namely, $\pm 2^i \Delta f$. Applicant respectfully submits that it is not enough for the Examiner to essentially argue that the disclosures of Jopson and the claimed systems and methods are both capable of producing a frequency shift of Δf, but must instead show how Jopson discloses the specific formula claimed: $\pm 2^i \Delta f$.

Claims 2-9 and 11-24 are dependent upon independent claims 1 or 10. Thus, since independent claim 1 and 10 should be allowable as discussed above, claims 2-9 and 11-24 should also be allowable at least by virtue of their dependency on independent claim 1 or 10. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. For example, claims 19 and 20 recite "wherein the frequency of the selected frequency channel is shifted logarithmically." Applicant respectfully submits that Jopson fails to teach or suggest the "logarithmic" shifting of a frequency channel. Rather, Jopson merely discloses that "channels [are] . . . spaced apart from each other by a first

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fixed frequency separation." *See*, Jopson, Col. 2, lines 17-25. Applicant respectfully submits such a disclosure does not teach or suggest the claimed "logarithmic" shifting.

Further, Applicant respectfully submits that Jopson does not teach or suggest "wherein the shift in frequency is based on the selectively directed frequency channel," as recited in claims 23 and 24. As stated above, Jopson merely discloses that channels are spaced apart from each other by a first fixed frequency separation. Applicant respectfully submits that such a disclosure does not teach or suggest that the shift in frequency is based on the selectively directed frequency channel.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 1, 2, 6, 7, 10, 11, 15, 16, and 19-24 be withdrawn.

II. CONCLUSION

In view of the foregoing, it is respectfully submitted that the present application is in condition for allowance, and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number, in order to expedite resolution of any issues and to expedite passage of the

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present application to issue, if any comments, questions, or suggestions arise in connection with the present application.
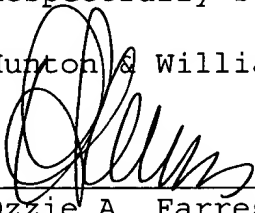
To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0206, and please credit any excess fees to the same deposit account.

Respectfully submitted,

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